

Title (en)

METHOD AND APPARATUS FOR REMOVING A SEMICONDUCTOR CHIP FROM A SUBSTRATE

Publication

EP 0028700 B1 19830504 (EN)

Application

EP 80105796 A 19800925

Priority

US 9332179 A 19791113

Abstract (en)

[origin: US4274576A] A semiconductor chip mounted on a substrate by solder columns connecting one side of the chip to the substrate, is removed from the substrate by cooling the unconnected side of the chip to embrittle the solder columns and then twisting the chip with small angle rotational motion to shear the columns at their midpoints. A mechanism for cooling and rotating the chip makes use of the cooling substance to minimize the contact of the substrate with the cooling substance.

IPC 1-7

H01L 21/60

IPC 8 full level

H01L 21/60 (2006.01); **H05K 13/04** (2006.01)

CPC (source: EP US)

H01L 24/75 (2013.01 - EP US); **H01L 24/81** (2013.01 - EP US); **H01L 24/98** (2013.01 - EP US); **H05K 13/0486** (2013.01 - EP US); **H01L 2224/16225** (2013.01 - EP US); **H01L 2224/75** (2013.01 - EP US); **H01L 2224/7999** (2013.01 - EP US); **H01L 2224/81801** (2013.01 - EP US); **H01L 2224/98** (2013.01 - EP US); **H01L 2924/01029** (2013.01 - EP US); **H01L 2924/01033** (2013.01 - EP US); **H01L 2924/014** (2013.01 - EP US); **H01L 2924/14** (2013.01 - EP US); **H01L 2924/15787** (2013.01 - EP US); **H01L 2924/3025** (2013.01 - EP US); **Y10T 29/49821** (2015.01 - EP US); **Y10T 29/49822** (2015.01 - EP US); **Y10T 225/304** (2015.04 - EP US)

Cited by

EP0097796A3

Designated contracting state (EPC)

DE FR GB

DOCDB simple family (publication)

EP 0028700 A1 19810520; **EP 0028700 B1 19830504**; DE 3062975 D1 19830609; US 4274576 A 19810623

DOCDB simple family (application)

EP 80105796 A 19800925; DE 3062975 T 19800925; US 9332179 A 19791113